

Instructions for Using the TRMM IST Prototype

The TRMM IST Prototype is a web-based tool which can be used to view and analyze CERES snap file house-keeping data. Current capabilities include the following:

1. Select and view entire snap files
2. Display selected parameters from a snap file in tabular format
3. Plot selected parameters from a snap file

To access the TRMM IST Prototype, open the URL “http://lposun.larc.nasa.gov/~dms/TRMM_IST”. The top-level page is divided into two main parts. The top portion contains the menus that are used for viewing and analyzing snap file data. These menus are described below in Section 1.0. The bottom portion of the page will initially contain the “TRMM IST Information Page”. The information page provides information about the current and possible future capabilities of the TRMM IST Prototype. The status of the work to be done will also be included on this page.

1.0 Menus

The following is a diagram of the main menu of the TRMM IST Prototype. Each of the menus is described in the sections that follow.

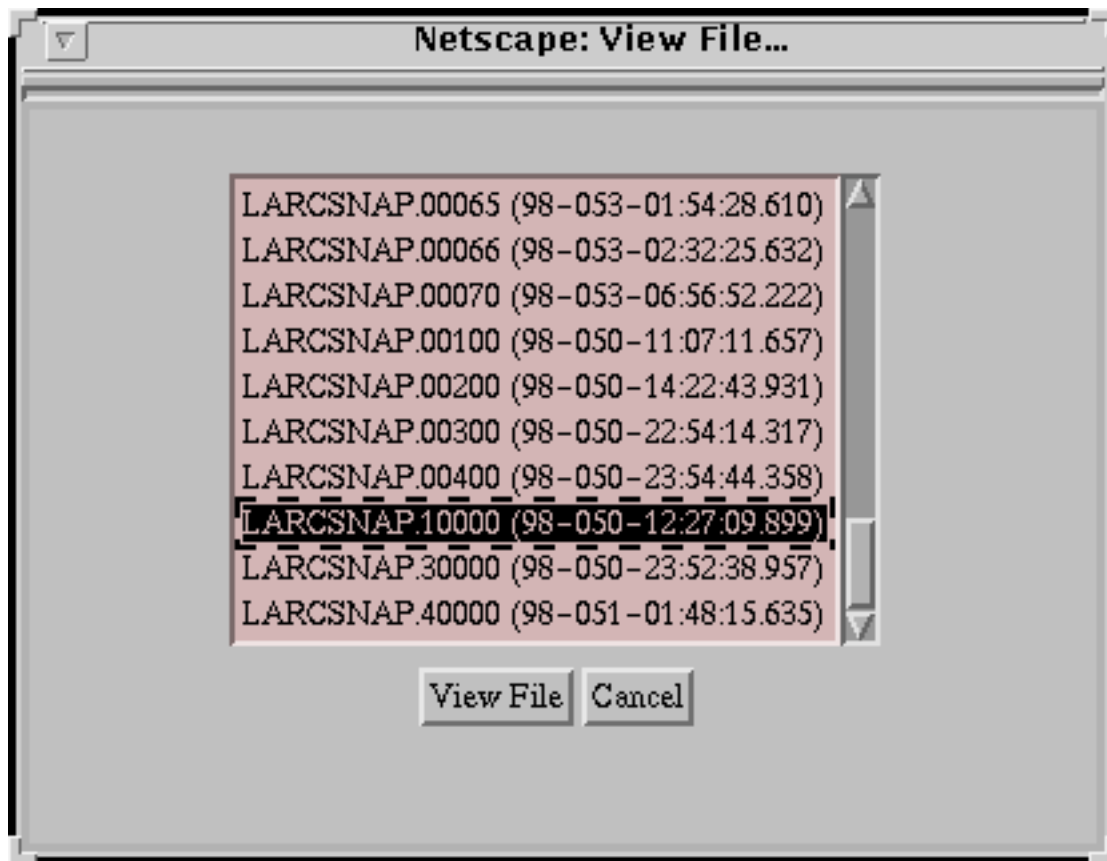


1.0.1 File

The *File* menu provides options for viewing snap file data textually. These options are described below in Sections 1.0.1.1 and 1.0.1.2.

1.0.1.1 View File

The *View File* option allows the user to display a snap file exactly as it is stored on the system. To view an entire snap file, click on *View File*. The following dialog box is displayed:



Select a file in the selection list and click on the *View File* button to display the file. The file will be displayed in a new Netscape window. Note that the string in parentheses next to the file name represents the time of the first record of data in the snap file. Use the *Cancel* button to cancel the *View File* operation and dismiss the dialog box.

The following is an example of the window that would be displayed based on the above dialog box selection. Note that to save space, only a portion of the window is included in this document.

```

98-050-12:27:09.899
CTOTTSET      = 2.0480000000E+03
CTOTTCTL      = 1 ON
CTOTSPLOOKAV  = 390
CTOTSENS5     = 4.8000000000E+02
CTOTSENS4     = 4.4800000000E+02
CTOTSENS3     = 4.4800000000E+02
CTOTSENS2     = 4.3200000000E+02
CTOTSENS1     = 4.1600000000E+02
CTOTMEAST     = 3.7972288875E+01
CTOTHTRDW     = 4.0950000000E+03 RM
CTOTCTL       = 3.7835387835E+01
CTOTBLKET     = -1.5200000000E+01 YL*
CTOTBBALSTD   = 1 UPDATED
CTOTBBALSTC   = 1 MAINTENANCE
CTOTBBALRCTR  = 0 *
CTOTBBALFDV   = 2825
CTOTBBALCDV   = 2599
CSWTSET       = 2.0480000000E+03
CSWTCTL       = 1 ON
CSWSPLOOKAV   = 135
CSWSENS5     = 1.2800000000E+02 YL
CSWSENS4     = 1.2800000000E+02 YL
CSWSENS3     = 1.2800000000E+02 YL
CSWSENS2     = 1.2800000000E+02 YL
CSWSENS1     = 1.2800000000E+02 YL
CSWMEAST     = 3.7972288875E+01
CSWICSPHDT    = 41
CSWICSPHDOUT  = 0 RL*
CSWICSLAMPI   = 0.0000000000E+00 RL*
CSWICSINTCMD  = 0 OFF
CSWHTRDW     = 1.4090000000E+03
CSWCCTL       = 3.7829251499E+01
CSWBBALSTD    = 0 HOLDING
CSWBBALSTC    = 1 MAINTENANCE

```

The snap file consists of a varying number of records which are separated from each other by a single blank line. Each record contains the time of the record followed by the 221 housekeeping parameters. The lines containing the housekeeping data are made up of up four fields. The first field contains the parameter name, the second field contains the parameter value, the third field contains limits flags (non-status data only), and the fourth field contains a string which corresponds to the numerical value of the status data (status data only). Use the *Save As...* option in Netscape's *File* menu to download the snap file to the local system. (Be sure to set the format for the saved document to "Text".)

1.0.1.2 View Selected Parameters

The *View Selected Parameters* option allows the user to display a subset of the housekeeping parameters in tabular format. To view a subset of the housekeeping parameters, click on *View Selected Parameters*. The following dialog box is displayed:

Netscape: View Selected Parameters...

Select Snap File:

LARCSNAP.00100 (98-050-11:07:11.657)
LARCSNAP.00001 (98-050-12:27:03.299)
LARCSNAP.10000 (98-050-12:27:09.899)

Housekeeping Parameters

CACAELECT -- ACA Electronics Temperature
CAZAPOS -- A Position Definition
CAZASYNC -- Async Rate Definition
CAZBPOS -- B Position Definition
CAZBRCMDST -- Brake Command Status
CAZBRMOTST -- Brake Motion Status
CAZBRPOSST -- Brake Position Status
CAZCAGEPOS -- Azimuth Caging (Brake) Position
CAZDIRST -- Azimuth Direction Status
CAZERS1 -- Azimuth Error @ Sample 351
CAZLEDLVL -- Azimuth Encoder LED Level
CAZLOBRGT -- Azimuth Lower Bearing Temperature
CAZMODE -- Azimuth Mode
CAZMOTST -- Azimuth Motion Status
CAZMTRDRST -- Azimuth Motor Drive Status
CAZPOSS1 -- Azimuth Position @ Sample 21
CAZPOSS2 -- Azimuth Position @ Sample 351
CAZPOSST -- Azimuth Position Status
CAZSOLCALPOS -- Solar Cal Position Definition
CAZSPPOS -- Spare 1 Position Definition

Display Options

- ☒ Display all values
- ☐ Display values only at the times the values change

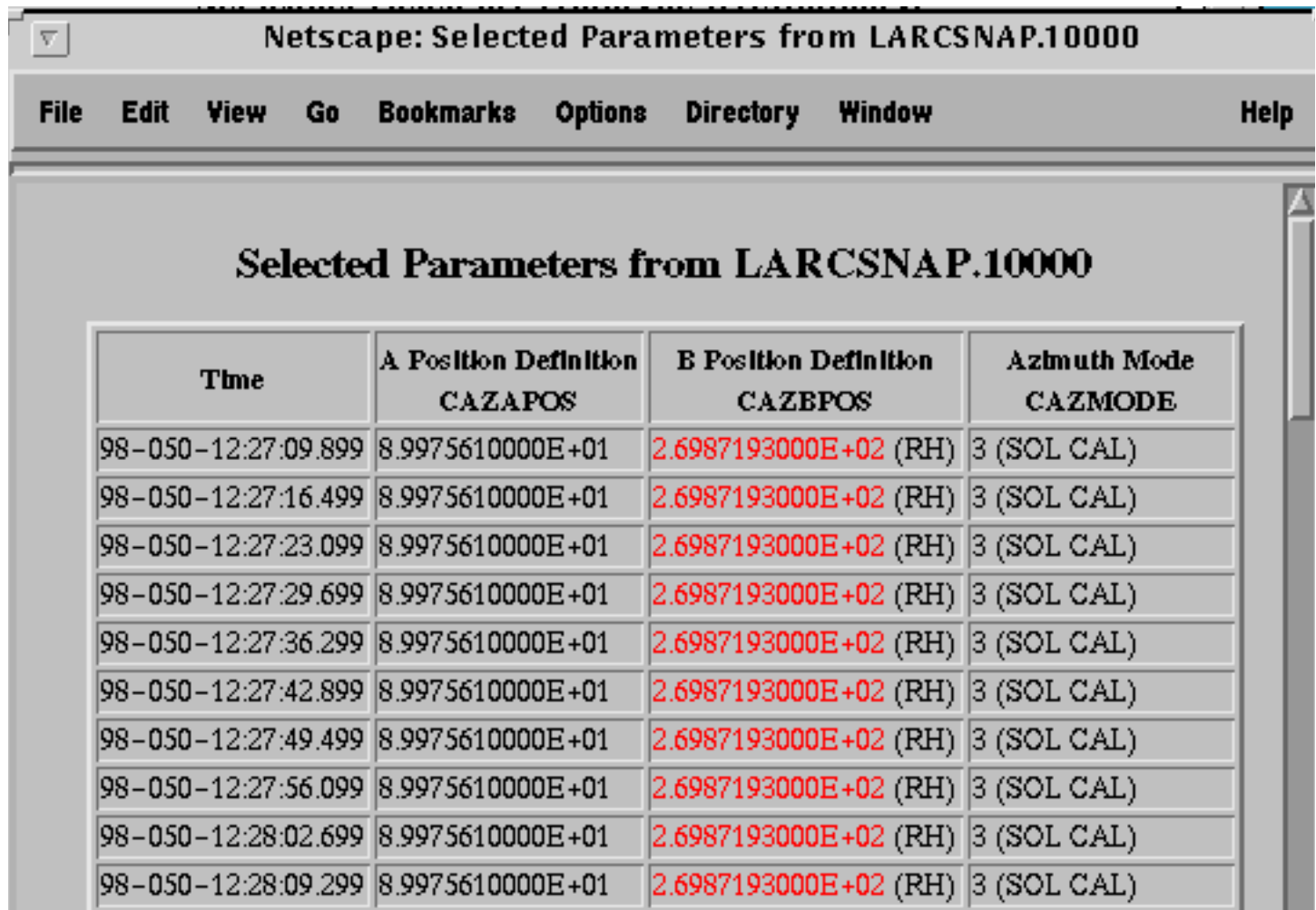
Display Selected Parameters

Reset Form

Cancel

Select a snap file from the selection list at the top of the dialog box. Select as many parameters as desired from the *Housekeeping Parameters* selection list. Select a display option by clicking on the appropriate radio button in the *Display Options* area. Click on the *Display Selected Parameters* button to display the selected parameters in tabular format. Use the *Reset Form* button to clear all of the selections in the dialog box. Use the *Cancel* button to cancel the *View Selected Parameters* operation and dismiss the dialog box.

The following is an example of the window that would be displayed based on the above dialog box selection. Note that to save space, only a portion of the window is included in this document.



Time	A Position Definition CAZAPOS	B Position Definition CAZBPOS	Azimuth Mode CAZMODE
98-050-12:27:09.899	8.9975610000E+01	2.6987193000E+02 (RH)	3 (SOL CAL)
98-050-12:27:16.499	8.9975610000E+01	2.6987193000E+02 (RH)	3 (SOL CAL)
98-050-12:27:23.099	8.9975610000E+01	2.6987193000E+02 (RH)	3 (SOL CAL)
98-050-12:27:29.699	8.9975610000E+01	2.6987193000E+02 (RH)	3 (SOL CAL)
98-050-12:27:36.299	8.9975610000E+01	2.6987193000E+02 (RH)	3 (SOL CAL)
98-050-12:27:42.899	8.9975610000E+01	2.6987193000E+02 (RH)	3 (SOL CAL)
98-050-12:27:49.499	8.9975610000E+01	2.6987193000E+02 (RH)	3 (SOL CAL)
98-050-12:27:56.099	8.9975610000E+01	2.6987193000E+02 (RH)	3 (SOL CAL)
98-050-12:28:02.699	8.9975610000E+01	2.6987193000E+02 (RH)	3 (SOL CAL)
98-050-12:28:09.299	8.9975610000E+01	2.6987193000E+02 (RH)	3 (SOL CAL)

The first column of the table will always contain the time of the record to which the measurement belongs. The remaining columns will contain the data for the selected housekeeping parameters. For analog data, all limits flags will be included in the table, and the value will be displayed in a color that reflects the limits flag setting. For status data, both the numerical value and the corresponding string will be displayed. Use the *Save As...* option in Netscape's *File* menu to download the table to the local system. Be sure to set the format for the saved document to "Text" to eliminate the HTML formatting tags. Note that in the saved document, the lines appear to be cut off at approximately 160 characters. If this causes problems, send e-mail to Beth Flug (b.t.flug@larc.nasa.gov), and an attempt will be made to find a work-around for this problem.

1.0.2 View

The *View* menu provides options that change the information that is displayed in the bottom frame of the main web page. These options are described below in Sections 1.0.2.1-1.0.2.3.

1.0.2.1 Information Page

The *Information Page* option will display the TRMM IST Information Page in the bottom frame of the main web page. The information page provides information about the current and possible future capabilities of the TRMM IST Prototype. The status of the work to be done is also included on this page.

1.0.2.2 Housekeeping

The *Housekeeping* option has not yet been implemented. This option will allow the user to play back the house keeping data for a specific time period. Currently, it is planned to have the play-back window appear in the bottom frame of the main web page; however, the play-back window may be displayed in a separate pop-up window.

1.0.2.3 Clear Display

The *Clear Display* option will clear the bottom frame of the main web page.

1.0.3 Plot

The *Plot* menu item will open a dialog box that can be used to set up and create plots. To set up and create a plot, click on *Plot*. A plot selection form will be displayed (see below). The plot form is divided into three sections. The first section contains a selection list for identifying the file from which the data is to be read. The second section can be used to save a new default graph or set up a graph based on a previously saved default graph. The third section of the plot form is used to identify the parameters that will appear on the graph. Three buttons appear at the bottom of the form. Use the *Create Plot* button to submit the form and create the plot. Use the *Reset Form* button to clear all of the selections in the form. Use the *Cancel* button to cancel the *Plot* operation and dismiss the dialog box.

To create a plot, select the snap file, enter a y-axis label and plot title, if desired, and select the parameters to be plotted. To select a housekeeping parameter, either type the parameter name in one of the eight text fields, or select a parameter from the *Housekeeping Parameters* selection list and click on one of the *Set to selected h/k parm* buttons to make the parameter name appear in the corresponding text field. To save the current plot settings as a default graph, enter a name for the default graph in the *New Default Graph* text field. The next time the plot selection form is opened, the new default graph will appear in the *Default Graph* selection list. When the plot setup is complete, click on the *Create Plot* button to create the plot. Depending on how many parameters are being plotted, it may take several minutes for the plot to appear. The plot will be displayed using the user's default PostScript viewer. The user may use the menus in the PostScript viewer to save and/or print the plot.

To change the plot settings to those of a previously defined default graph, simply select the default graph name in the *Default Graph* selection list and click on the *Set Plot Parameters* button. The graph settings will appear in the *Plot Parameters* area of the form. Note that if the plot selection form has not been re-opened since the default graph was defined, the default graph will not appear in the selection list. Just close and re-open the plot selection form to make the new graph appear in the list.

Netscape: Select Data to Plot

Select Snap File:

LARCSNAP.00100 (98-050-11:07:11.657)

LARCSNAP.00001 (98-050-12:27:03.299)

LARCSNAP.10000 (98-050-12:27:09.899)

Default Graph:

btf1

Set Plot Parameters

New Default Graph:

Plot Parameters

Y-Axis Label:

Plot Title:

Housekeeping Parameters:

CACAELECT

CAZAPOS

CAZASYNC

CAZBPOS

CAZBRCMDST

Blue

Set to selected h/k parm

Green

Set to selected h/k parm

Cyan

Set to selected h/k parm

Red

Set to selected h/k parm

Magenta

Set to selected h/k parm

Pink

Set to selected h/k parm

Gold

Set to selected h/k parm

Brown

Set to selected h/k parm

Create Plot

Reset Form

Cancel

1.0.4 *Help*

The *Help* menu provides options for submitting comments and suggestions and for obtaining help. These options are described below in Sections 1.0.4.1 and 1.0.4.2.

1.0.4.1 *Comments/Questions*

The *Comments/Questions* option will open a mail composition window in which the user can type a message to provide comments about the web application or obtain help in using the web application. The message will be sent to the web site developer(s).

1.0.4.2 *Documentation*

The *Documentation* option will open a new window containing on-line documentation for this web application. Note that the on-line documentation will be an HTML version of this document.

2.0 Snap File Availability

The snap files used in this web application are stored in the anonymous ftp account on “flug.larc.nasa.gov”. The files can be accessed either via the TRMM IST Prototype or by direct ftp transfer. To ftp a snap file to the local machine, do the following:

- Type “ftp flug”
- Enter “anonymous” for the user name
- Enter any string for the password
- cd to the “pub” directory
- Type “get *filename*” (file names are described below)
- Type “bye” to end the ftp session

The naming convention for the snap files is as follows:

- **LARCSNAP.000xx** (“xx” is a number from “00” to “70”)
These files were obtained during TRMM Sim #1, which took place November 1-4, 1996. These files contain valid analog data but do not contain valid instrument status data.
- **LARCSNAP.00x00** (“x” is a number from “1” to “4”)
These files were received on December 17, 1996. They do contain the corrected instrument status data. They were generated using stored playback data from TRMM Sim #1. These files cover periods much longer than real-time contacts and include every 10th record of normal housekeeping data.
- **LARCSNAP.x0000** (“x” is a number from “1” to “3”)
These files were received on December 20, 1996. They contain the corrected instrument status data and cover real-time contact periods.